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现代妇产科学英语精要

Current Obstetric & Gynecologic Diagnosis & Treatment

Edited by Alan H. DeCherney
Martin L. Pernoll

 人民卫生出版社

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Current Obstetric & Gynecologic Diagnosis & Treatment

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现代妇产科学英语精要

Current Obstetric & Gynecologic Diagnosis & Treatment

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序

英语是世界医学领域不可由其他语言替代的通用语言。作为医学科技工作者,只有掌握英语,才能顺利阅读日益增多的医学文献和原著或熟练地从因特网上获取医学专业发展的前沿信息,从而充实提高自己的医学专业知识;也只有掌握英语才能将自己研究的成果或经验体会报道和发表出去。

对于医学生和青年医生来说,有了一定的公共英语基础知识以后,尽快接触医学专业英语,掌握一定量的医学专业单词,有目的地训练自己在英语方面的听说读写能力,对从事专业上的对外交流和对内传播有着极其重要的意义。正是由于这个原因,经全国高等医药教材建设研究会研究决定,由人民卫生出版社邀请内、外、妇、儿四大专业具有良好英语功底和丰富临床经验的专家选摘编写了这套“现代医学英语精要”系列丛书。我相信这套丛书在引导医学生和青年医生获得医学知识的同时,还可以使他们学习到规范的医学专业英语单词和语句,对他们阅读英语文献和原著的能力将有很大的帮助。希望读者认真利用这套丛书,体会医学专业英语的精髓、特点和使用习惯,举一反三,触类旁通,不断提高自己的医学英语水平。

裘法祖

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2002年10月1日

前 言

本书为全国高等医药院校五年制和七年制临床医学专业《妇产科学》教材的英语配套读物。编纂此书目的为:使临床医学生熟悉妇产科学专业英语,提高外语水平;了解国内外妇产科医疗概况,并通过中英文版比较、思考,提高学生的专业水平;为今后编写妇产科双语教学的教材奠定基础。

本摘编自北美地区权威的妇产科教材《Current Obstetric & Gynecologic Diagnosis & Treatment》。因其内容先进,在一定程度上综合了世界妇产科学专业最新的科学内容;语句简洁明了,表达深入浅出,适用于临床医学生及低、中年资妇产科医师。

全书节选与中文版相应的章节,各章排序基本与中文版对应;在原文计量单位前,增加了我国法定计量单位,与中文版教材相一致;本书还精选了一些图与表,希望与中文版教材起到互补作用。

本书为外文原书部分章节的拷贝,并非中文版教材的译文,故书中有关疾病的治疗与用药方法为西方人的标准,若有与中文版教材不符时,应以中文版教材为准。

另外,为和原书一致,目录中只反映了各章中的疾病,其他标题并未在目录中全部反映出来;为反映章节的连续性,目录中二级标题也依原书仅排为单词首字母大写,与正文全部大写的标题不甚一致。这些与中文版教材有所不同,请读者阅读时注意。

全书虽为外文原书的拷贝,初想工作较易,但在节选、打印及校对工作过程中,作者们仍几尽全力。如有错误或不妥之处,殷切希望各校师生和妇产科同道们指出,以便纠正、改进。

丰有吉

于复旦大学附属妇产科医院

2001年10月

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Anatomy of the Female Reproductive System

1

Kermit E. Krantz, MD, LittD

摘编 丰有吉

BONY PELVIS

The pelvis (Fig1 - 1) is a basin - shaped ring of bones that marks the distal margin of the trunk. The pelvis rests upon the lower extremities and supports the spinal column. It is composed of 2 innominate bones, one on each side, joined anteriorly and articulated with the sacrum posteriorly. The 2 major pelvic divisions are the pelvis major (upper or false pelvis) and the pelvis minor (lower or true pelvis). The pelvis major consists primarily of the space superior to the iliopectineal line, including the 2 iliac fossae and the region between them. The pelvis minor, located below the iliopectineal

line, is bounded anteriorly by the pubic bones, posteriorly by the sacrum and coccyx, and laterally by the ischium and a small segment of the ilium.

Sacroiliac Joint

The sacroiliac joint is a diarthrodial joint with irregular surfaces. The articular surfaces are covered with a layer of cartilage, and the cavity of the joint is a narrow cleft. The cartilage on the sacrum is hyaline in its deeper parts but much thicker than that on the ilium. A joint capsule is attached to the margins of the articular surfaces, and the bones are held together by the anterior sacroiliac, long and short posterior sacroiliac, and interosseous ligaments. In addition,

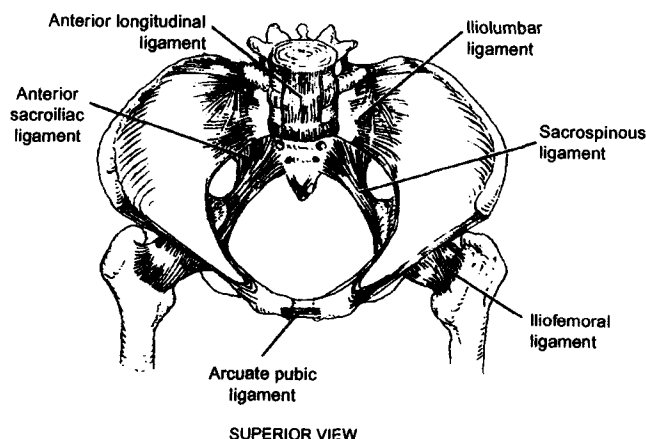


Figure 1 - 1. The bony pelvis. (Reproduced, with permission, from Benson RC: *Handbook of Obstetrics & Gynecology*, 8th ed. Lange, 1983)

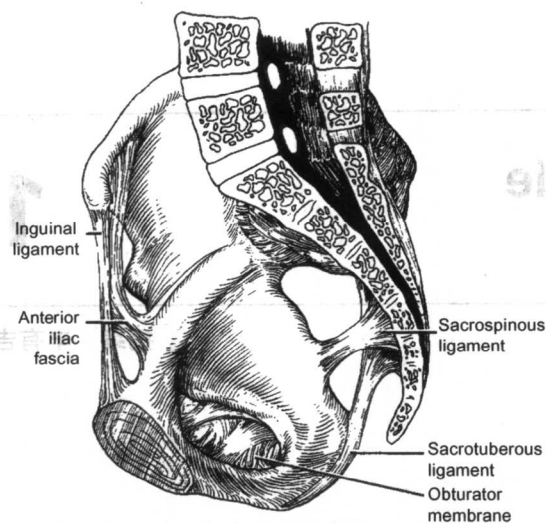


Figure 1 -2. Ligaments of the pelvis.

tion, there are 3 ligaments (Fig 1 -2), classed as belonging to the pelvic girdle itself, which also serve as accessory ligaments to the sacroiliac joint: the iliolumbar, sacrotuberous, and sacrospinous ligaments. The anterior sacroiliac ligaments unite the base and the lateral part of the sacrum to the ilium, blending with the periosteum of the pelvic surface and, on the ilium, reaching the arcuate line to attach in the paraglenoid grooves. The posterior sacroiliac ligament is extremely strong and consists essentially of 2 sets of fibers, deep and superficial, forming the short and long posterior sacroiliac ligaments, respectively. The short posterior sacroiliac ligament passes inferiorly and medially from the tuberosity of the ilium, behind the articular surface and posterior interior iliac spine, to the back of the lateral portion of the sacrum and to the upper sacral articular process, including the area between it and the first sacral foramen. The long posterior sacroiliac ligament passes inferiorly from the posterior superior iliac spine to the second, third, and fourth articular tubercles on the back of the sacrum. It partly covers the short ligament and is continuous below with the sacrotuberous ligament. The interosseous ligaments are the strongest of all and consist of fibers of different lengths passing in various directions between the 2 bones. They extend from the rough sur-

face of the sacral tuberosity to the corresponding surface on the lateral aspect of the sacrum, above and behind the articular surface.

Ligaments

The sacrotuberous ligament, in common with the long posterior sacroiliac ligament, is attached above to the crest of the ilium and posterior iliac spines and to the posterior aspect of the lower 3 sacral vertebrae. Below, it is attached chiefly to the medial border of the ischial tuberosity. Some of the fibers at the other end extend forward along the inner surface of the ischial ramus, forming the falciform process. Other posterior fibers continue into the tendons of the hamstrings.

The sacrospinous ligament is triangular and thin, extending from the lateral border of the sacrum and coccyx to the spine of the ischium. It passes medially (deep) to the sacrotuberous ligament and is partly blended with it along the lateral border of the sacrum.

The iliolumbar ligament connects the fourth and fifth lumbar vertebrae with the iliac crest. It originates from the transverse process of the fifth lumbar vertebra, where it is closely woven with the sacrolumbar ligament. Some of its fibers spread downward onto the body of the fifth vertebra and others ascend to the disk above. It is attached to the inner lip of the crest of the ilium for approximately 5 cm. The sacrolumbar ligament is generally inseparable from the iliolumbar ligament and is regarded as part of it.

Outlets of the True Pelvis

The true pelvis is said to have an upper "inlet" and a lower "outlet". The pelvic inlet to the pelvis minor is bounded, beginning posteriorly, by (1) the promontory of the sacrum; (2) the linea terminalis, composed of the anterior margin of the alae sacralis, the arcuate line of the ilium, and the pecten ossis pubis; and (3) the upper border or crest of the pubis, ending medially at the symphysis. The conjugate or the anteroposterior diameter is drawn from the center of the promontory to the symphysis pubica, with 2 conjugates recognized: (1) the true conjugate, measured from the promontory to the top of the symphysis, and

(2) the diagonal conjugate, measured from the promontory to the bottom of the symphysis. The transverse diameter is measured through the greatest width of the pelvic inlet. The oblique diameter runs from the sacroiliac joint of one side to the iliopectineal eminence of the other. The pelvic outlet, which faces downward and slightly backward, is very irregular. Beginning anteriorly, it is bounded by (1) the arcuate ligament of the pubis (in the midline), (2) the ischiopubic arch, (3) the ischial tuberosity, (4) the sacrotuberous ligament, and (5) the coccyx (in midline). Its anteroposterior diameter is drawn from the lower border of the symphysis pubica to the tip of the coccyx. The transverse diameter passes between the medial surfaces of the ischial tuberosities.

Types of Pelves

Evaluation of the pelvis is best achieved by using the criteria set by Caldwell and Moloy, which are predicated upon 4 basic types of pelvis: (1) the gynecoid type (from Greek *gyne* woman); (2) the android type (from Greek *aner* man); (3) the anthropoid type (from Greek *anthropos* human); and (4) the platypelloid type (from Greek *platys* broad and *pellos* bowl) (Fig 1-3).

A. Gynecoid: In pure form, the gynecoid pelvis provides a rounded, slightly ovoid, or elliptical inlet with a well-rounded forepelvis (anterior segment). This type of pelvis has a well-rounded, spacious posterior segment, an adequate sacrosciatic notch, a hollow sacrum with a somewhat backward sacral inclination, and a Norman-type arch of the pubic rami. The gynecoid pelvis has straight side walls and wide interspinous and intertuberosity diameters. The bones are primarily of medium weight and structure.

B. Android: The android pelvis has a wedge-shaped inlet, a narrow forepelvis, a flat posterior segment, and a narrow sacrosciatic notch, with the sacrum inclining forward. The side walls converge, and the bones are medium to heavy in structure.

C. Anthropoid: The anthropoid pelvis is characterized by a long, narrow, oval inlet, an extended and narrow anterior and posterior seg-

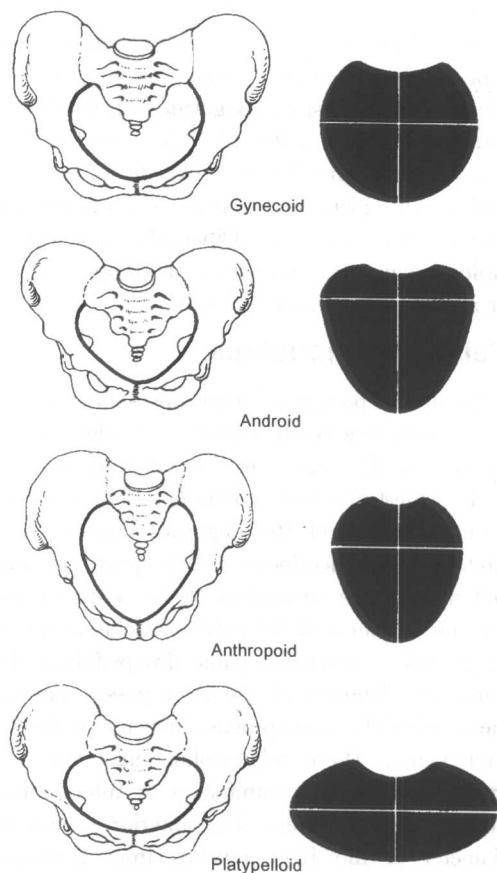


Figure 1-3. Types of pelvis. White lines in the diagrams at right (after Steele) show the greatest diameters of the pelvis at left. (Reproduced, with permission, from Benson RC. *Handbook of Obstetrics & Gynecology*, 8th ed. Lange, 1983)

ment, a wide sacrosciatic notch, and a long, narrow sacrum, often with 6 sacral segments. The subpubic arch may be an angled Gothic type or rounded Norman type. Straight side walls are characteristic of the anthropoid pelvis, whose interspinous and intertuberosity diameters are less than those of the average gynecoid pelvis. A medium bone structure is usual.

D. Platypelloid: The platypelloid pelvis has a distinct oval inlet with a very wide, rounded retro pubic angle and a wider, flat posterior segment. The sacrosciatic notch is narrow and has a normal sacral inclination, although it is often short. The subpubic arch is very wide and the side walls are straight, with wide interspinous and intertuberosity diameters.

The pelvis in any individual case may be one of the 4 "pure" types or a combination of mixed types. When one discusses the intermediate pelvic forms, the posterior segment with its characteristics generally is described first and the anterior segment with its characteristics next, eg, anthropoid – gynecoid, android – anthropoid, or platypelloid – gynecoid. Obviously, it is impossible to have a platypelloid – anthropoid pelvis or a platypelloid – android pelvis.

Pelvic Relationships

Several important relationships should be remembered, beginning with those at the inlet of the pelvis. The transverse diameter of the inlet is the widest diameter, where bone is present for a circumference of 360 degrees. This diameter stretches from pectineal line to pectineal line and denotes the separation of the posterior and anterior segments of the pelvis. In classic pelves (gynecoid), a vertical plane dropped from the transverse diameter of the inlet passes through the level of the interspinous diameter at the ischial spine. These relationships may not hold true, however, in combination or intermediate (mixed type) pelves. The anterior transverse diameter of the inlet reaches from pectineal prominence to pectineal prominence; a vertical plane dropped from the anterior transverse passes through the ischial tuberosities. For good function of the pelvis, the anterior transverse diameter should never be more than 2cm longer than the transverse diameter (Fig 1 –4).

A. Obstetric Conjugate: The obstetric

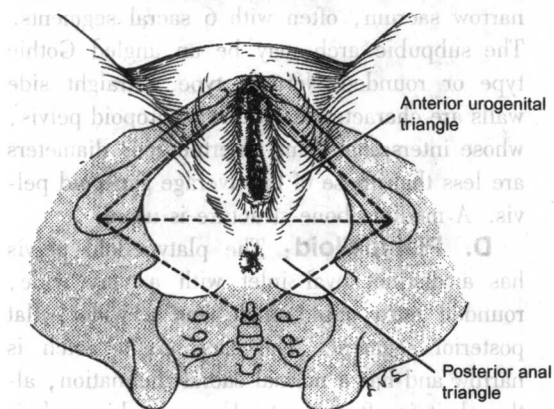


Figure 1 –4. Urogenital and anal triangles.

conjugate differs from both the diagonal conjugate and the true conjugate. It is represented by a line drawn from the posterior superior portion of the pubic symphysis (where bone exists for a circumference of 360 degrees) toward intersection with the sacrum. This point need not be at the promontory of the sacrum. The obstetric conjugate is divided into 2 segments: (1) the anterior sagittal, originating at the intersection of the obstetric conjugate with the transverse diameter of the inlet and terminating at the symphysis pubica, and (2) the posterior sagittal, originating at the transverse diameter of the inlet to the point of intersection with the sacrum.

B. Interspinous Diameter: A most significant diameter in the midpelvis is the interspinous diameter. It is represented by a plane passing from ischial spine to ischial spine. The posterior sagittal diameter of the mid pelvis is a bisecting line drawn at a right angle from the middle of the interspinous diameter, in the same plane, to a point of intersection with the sacrum. This is the point of greatest importance in the mid pelvis. It is sometimes said that the posterior sagittal diameter should be drawn from the posterior segment of the intersecting line of the interspinous diameter, in a plane from the inferior surface of the symphysis, through the interspinous diameter to the sacrum. However, this configuration often places the posterior sagittal diameter lower in the pelvis than the interspinous diameter. It is the interspinous diameter, together with the posterior sagittal diameter of the mid pelvis, that determines whether or not there is adequate room for descent and extension of the head during labor.

C. Intertuberos diameter: The intertuberos diameter of the outlet will reflect the length of the anterior transverse diameter of the inlet, ie, the former cannot be larger than the latter if convergent or straight side walls are present. Therefore, the intertuberos diameter determines the space available in the anterior segment of the pelvis at the inlet, and, similarly, the degree of convergence influences the length of the biparietal diameter at the outlet.

D. Posterior Sagittal Diameter: The posterior sagittal diameter of the outlet is an intersecting line drawn from the middle of the in-

tertuberous diameter to the sacrococcygeal junction and reflects the inclination of the sacrum toward the outlet for accommodation of the head at delivery. It should be noted that intricate measurements of the pelvis are significant only at minimal levels. Evaluation of the pelvis for a given pregnancy, size of the fetus for a given pelvis, and conduct of labor engagement are far more important.

PELVIC DIAPHRAGM

The pelvic diaphragm (Fig 1 - 5) extends from the upper part of the pelvic surface of the pubis and ischium to the rectum, which passes through it. The pelvic diaphragm is formed by the levator ani and coccygeus muscles and covering fasciae. The diaphragmatic fasciae cloaking the levator ani arise from the parietal pelvic fascia (obturator fascia), the muscular layer lying between the fasciae. As viewed from above, the superior fascia is the best developed and is reflected onto the rectum, forming the "rectal sheath". The coccygeus muscle forms the deeper portion of the posterolateral wall of the ischiorectal fossa, helping to bound the pel-

vic outlet. The diaphragm presents a hiatus anteriorly, occupied by the vagina and urethra. The pelvic diaphragm is the main support of the pelvic floor; it suspends the rectum and indirectly supports the uterus.

PUDENDUM

The vulva consists of the mons pubis, the labia majora, the labia minora, the clitoris, and the glandular structures that open into the vestibulum vaginae (Fig 1 - 6). The size, shape, and coloration of the various structures, as well as the hair distribution, vary between individuals and racial groups. Normal pubic hair in the female is distributed in an inverted triangle, with the base centered over the mons pubis. Nevertheless, in approximately 25% of normal women, hair may extend upward along the linea alba. The type of hair is dependent, in part, on the pigmentation of the individual. It varies from heavy, coarse, crinkly hair in blacks to sparse, fairly fine, lanugo type hair in Oriental women. The length and size of the various structures of the vulva are influenced by the pelvic architecture, as is also the position of the

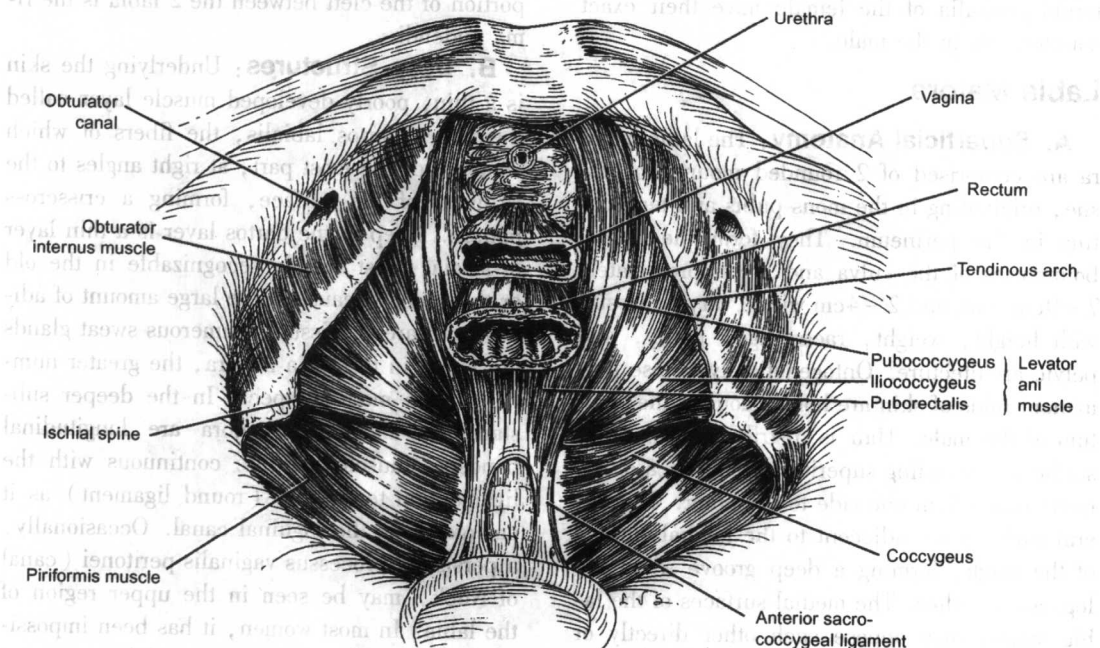


Figure 1 - 5. Pelvic diaphragm from above.

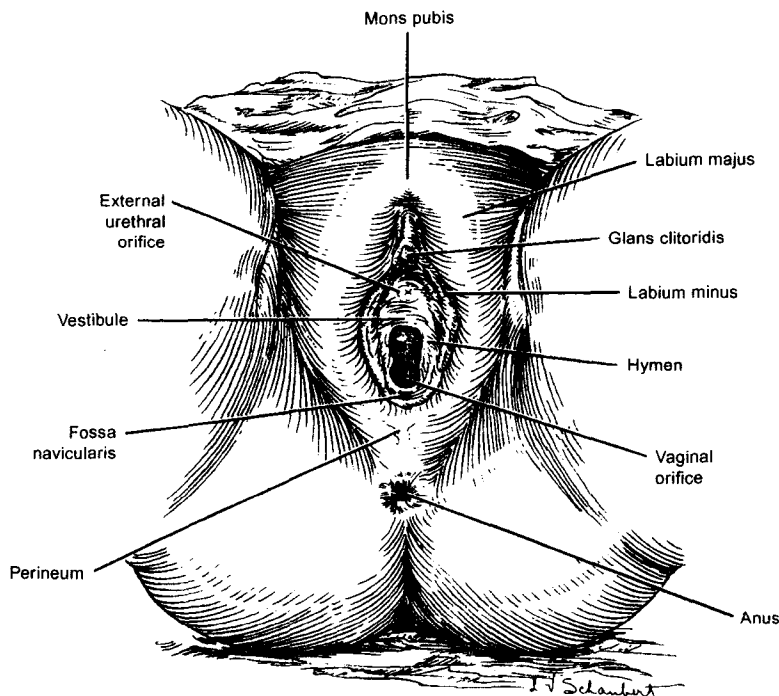


Figure 1 – 6. External genitalia of adult female (parous).

pelvic architecture, as is also the position of the external genitalia in the perineal area. The external genitalia of the female have their exact counterparts in the male.

Labia Majora

A. Superficial Anatomy: The labia majora are comprised of 2 rounded mounds of tissue, originating in the mons pubis and terminating in the perineum. They form the lateral boundaries of the vulva and are approximately 7 – 9cm long and 2 – 4cm wide, varying in size with height, weight, race, age, parity, and pelvic architecture. Ontogenetically, these permanent folds of skin are homologous to the scrotum of the male. Hair is distributed over their surfaces, extending superiorly in the area of the mons pubis from one side to the other. The lateral surfaces are adjacent to the medial surface of the thigh, forming a deep groove when the legs are together. The medial surfaces of the labia majora may oppose each other directly or may be separated by protrusion of the labia minora. The cleft that is formed by this opposition anteriorly is termed the anterior commissure.

Posteriorly, the cleft is less clearly defined and termed the posterior commissure. The middle portion of the cleft between the 2 labia is the rima pudendi.

B. Deep Structures: Underlying the skin is a thin, poorly developed muscle layer called the tunica dartos labialis, the fibers of which course, for the most part, at right angles to the wrinkles of the surface, forming a crisscross pattern. Deep to the dartos layer is a thin layer of fascia, most readily recognizable in the old or the young because of the large amount of adipose and areolar tissue. Numerous sweat glands are found in the labia majora, the greater number on the medial aspect. In the deeper substance of the labia majora are longitudinal bands of muscle that are continuous with the ligamentum teres uteri (round ligament) as it emerges from the inguinal canal. Occasionally, a persistent processus vaginalis peritonei (canal of Nuck) may be seen in the upper region of the labia. In most women, it has been impossible to differentiate the presence of the cremaster muscle beyond its area of origin.

C. Arteries: The arterial supply into the la-

labia majora comes from the internal and external pudendals, with extensive anastomoses. Within the labia majora is a circular arterial pattern originating inferiorly from a branch of the perineal artery, from the external pudendal artery in the anterior lateral aspect, and from a small artery of the ligamentum teres uteri superiorly. The inferior branch from the perineal artery, which originates from the internal pudendal as it emerges from the canalis pudendalis (Alcock's canal), forms the base of the rete with the external pudendal arteries. These arise from the medial side of the femoral and, occasionally, from the deep arteries just beneath the femoral ring, coursing medially over the pectineus and adductor muscles, to which they supply branches. They terminate in a circular rete within the labium majus, penetrating the fascia lata adjacent to the fossa ovalis and passing over the round ligament to send a branch to the clitoris.

D. Veins: The venous drainage is extensive and forms a plexus with numerous anastomoses. In addition, the veins communicate with the dorsal vein of the clitoris, the veins of the labia minora, and the perineal veins, as well as with the inferior hemorrhoidal plexus. On each side, the posterior labial veins connect with the external pudendal vein, terminating in the great saphenous vein (saphena magna) just prior to its entrance (saphenous opening) in the fossa ovalis. This large plexus is frequently manifested by the presence of large varicosities during pregnancy.

E. Lymphatics: The lymphatics of the labia majora are extensive and utilize 2 systems, one lying superficially (under the skin) and the other deeper, within the subcutaneous tissues. From the upper two-thirds of the left and right labia majora, superficial lymphatics pass toward the symphysis and turn laterally to join the medial superficial inguinal nodes. These nodes drain into the superficial inguinal nodes overlying the saphenous fossa. The drainage flows into and through the femoral ring (fossa ovalis) to the nodi lymphatici inguinales profundi (nodes of Rosenmüller or Cloquet; deep subinguinal nodes), connecting with the external iliac chain. The superficial subinguinal nodes, situated over the femoral trigone, also

accept superficial drainage from the lower extremity and the gluteal region. This drainage may include afferent lymphatics from the perineum. In the region of the symphysis pubica, the lymphatics anastomose in a plexus between the right and left nodes. Therefore, any lesion involving the labia majora allows direct involvement of the lymphatic structures of the contralateral inguinal area. The lower part of the labium majus has superficial and deep drainage that is shared with the perineal area. The drainage passes, in part, through afferent lymphatics to superficial subinguinal nodes; from the posterior medial aspects of the labia majora, it frequently enters the lymphatic plexus surrounding the rectum.

F. Nerves: The innervation of the external genitalia has been studied by many investigators. The iliohypogastric nerve originates from T12 and L1 and traverses laterally to the iliac crest between the transversus and internal oblique muscles, at which point it divides into 2 branches: (1) the anterior hypogastric nerve, which descends anteriorly through the skin over the symphysis, supplying the superior portion of the labia majora and the mons pubis, and (2) the posterior iliac, which passes to the gluteal area.

The ilioinguinal nerve originates from L1 and follows a course slightly inferior to the iliohypogastric nerve, with which it may frequently anastomose, branching into many small fibers that terminate in the upper medial aspect of the labium majus.

The genitofemoral nerve (L1 - L2) emerges from the anterior surface of the psoas muscle to run obliquely downward over its surface, branching in the deeper substance of the labium majus to supply the dartos muscle and that vestige of the cremaster present within the labium majus. Its lumboinguinal branch continues downward onto the upper part of the thigh.

From the sacral plexus, the posterior femoral cutaneous nerve, originating from the posterior divisions of S1 and S2 and the anterior divisions of S2 and S3, divides into several rami that, in part, are called the perineal branches. They supply the medial aspect of the thigh and the labia majora. These branches of the posterior femoral cutaneous nerve are derived from the

sacral plexus. The pudendal nerve, composed primarily of S2, S3, and S4, often with a fascicle of S1, sends a small number of fibers to the medial aspect of the labia majora.

Labia Minora

A. Superficial Anatomy: The labia minora are 2 folds of skin that lie within the rima pudendi and measure approximately 5cm in length and 0.5 – 1cm in thickness. The width varies according to age and parity, measuring 2 – 3cm at its narrowest diameter to 5 – 6cm at it widest, with multiple corrugations over the surface. The labia minora begin at the base of the clitoris, where fusion of the labia is continuous with the prepuce, extending posteriorly and medially to the labia majora at the posterior commissure. On their medial aspects superiorly beneath the clitoris, they unite to form the frenulum adjacent to the urethra and vagina, terminating along the hymen on the right and left sides of the fossa navicularis and ending posteriorly in the frenulum of the labia pudendi, just superior to the posterior commissure. A deep cleft is formed on the lateral surface between the labium majus and the labium minus. The skin on the labia minora is smooth and pigmented. The color and distention vary, depending on the level of sexual excitement and the pigmentation of the individual. The glands of the labia are homologous to the glandulae preputiales (glands of Littre) of the penile portion of the male urethra.

B. Arteries: The main source of arterial supply occurs through anastomoses from the superficial perineal artery, branching from the dorsal artery of the clitoris, and from the medial aspect of the rete of the labia majora. Similarly, the venous pattern and plexus are extensive.

C. Veins: The venous drainage is to the medial vessels of the perineal and vaginal veins, directly to the veins of the labia majora, to the inferior hemorrhoidals posteriorly, and to the clitoral veins superiorly.

D. Lymphatics: The lymphatics medially may join those of the lower third of the vagina superiorly and the labia majora laterally, passing to the superficial subinguinal nodes and to the deep subinguinal nodes. In the midline,

the lymphatic drainage coincides with that of the clitoris, communicating with that of the labia majora to drain to the opposite side.

E. Nerves: The innervation of the labia minora originates, in part, from fibers that supply the labia majora and from branches of the pudendal nerve as it emerges from the canalis pudendalis (Alcock's canal). These branches originate from the perineal nerve. The labia minora and the vestibule area are homologous to the skin of the male urethra and penis. The short membranous portion, approximately 0.5cm of the male urethra, is homologous to the mid – portion of the vestibule of the female.

Clitoris

A. Superficial Anatomy: The clitoris is the homologue of the dorsal part of the penis and consists of 2 small erectile cavernous bodies, terminating in a rudimentary glans clitoridis. The erectile body, the corpus clitoridis, consists of the 2 crura clitoridis and the glans clitoridis, with overlying skin and prepuce, a miniature homologue of the glans penis. The crura extend outward bilaterally to their position in the anterior portion of the vulva. The cavernous tissue, homologous to the corpus spongiosum penis of the male, appears in the vascular pattern of the labia minora in the female. At the lower border of the pubic arch, a small triangular fibrous band extends onto the clitoris (suspensory ligament) to separate the 2 crura, which turn inward, downward, and laterally at this point, close to the inferior rami of the pubic symphysis. The crura lie inferior to the ischiocavernosus muscles and bodies. The glans is situated superiorly at the fused termination of the crura. It is composed of erectile tissue and contains an integument, hood – like in shape, termed the prepuce. On its ventral surface, there is a frenulum clitoridis, the fused junction of the labia minora.

B. Arteries: The blood supply to the clitoris is from its dorsal artery, a terminal branch of the internal pudendal artery, which is the terminal division of the posterior portion of the internal iliac (hypogastric) artery. As it enters the clitoris, it divides into 2 branches, the deep and dorsal arteries. Just before entering